

1                   IN THE UNITED STATES DISTRICT COURT  
2                   FOR THE EASTERN DISTRICT OF TEXAS  
3                   TYLER DIVISION

4                   CELLULAR COMMUNICATIONS         )  
5                   EQUIPMENT, LLC                   ) DOCKET NO. 6:14cv251  
6                   - vs -                            )  
7                   APPLE INC., ET AL               ) Tyler, Texas  
                                                        ) 1:24 p.m.  
                                                        ) September 12, 2016

8                   TRANSCRIPT OF TRIAL  
9                   AFTERNOON SESSION  
10                  BEFORE THE HONORABLE K. NICOLE MITCHELL,  
11                  UNITED STATES MAGISTRATE JUDGE

12                  A P P E A R A N C E S

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PROCEEDINGS

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(REPORTER'S NOTE: Courtroom sealed from the  
23 Morning Session and Sealed Portion No. 13  
24 continues.)

25

(Courtroom unsealed.)

26

THE COURT: And let's continue, Mr. Findlay.

27

MR. FINDLAY: Thank you, Your Honor. Very briefly.

28

Q. (By Mr. Findlay) Mr. Bakewell, just a few questions.

29

Did the work you do -- did the work that you did in this case  
30 go beyond just work for Apple, sir?

31

A. Yes, it did.

1 Q. Okay. And I want to -- you were here for Mr. Green's  
2 testimony. I think you indicated that; is that right?

3 A. Yes.

4 Q. I want to show you testimony on the document camera when  
5 Mr. Green and I were visiting. I asked him this question, if  
6 you recall: Can we agree that as between you and  
7 Mr. Bakewell, the things that we should be focusing on is the  
8 substance of your testimony, the substance of your opinions,  
9 not about the finances as to who was paid what?

10 Do you recall that question?

11 A. Yes.

12 Q. And what was Mr. Green's answer?

13 A. He said: I think that's fair, sure.

14 Q. Do you agree with that as well?

15 A. I do.

16 Q. Did it appear that Mr. Hill agreed with that?

17 A. No. He did not agree with that, apparently.

18 Q. Mr. Hill brought up some of your deposition testimony  
19 where some folks that were members of your team were  
20 mentioned. I think so it was Ms. Rowe; is that right?

21 A. That's correct.

22 Q. And Mr. Gray?

23 A. Mr. Gray. That's correct.

24 Q. Just briefly tell the jury, who are those individuals  
25 Mr. Bakewell?

1 A. Sure.

2 So Ms. Rowe is one of my colleagues. She's actually  
3 here today. Ms. Rowe is --

4 MR. FINDLAY: Ms. Rowe, would you stand up briefly?

5 Thank you.

6 A. And I mentioned, that Ms. Rowe is very, I think -- a  
7 colleague that I respect and she has a CPA. She went to the  
8 University of Michigan and DePaul University. She's one of  
9 the hardest working people I know. And I think she deserves  
10 credit for the work that she's done when I'm asked about it,  
11 and I'm more than happy to do it.

12 Same thing for Mr. Gray. He went to Indiana University,  
13 and he's a very hard-working guy. I enjoy working with him  
14 very much, and I'm more than happy to give hem credit for the  
15 work that he's done, too.

16 Q. (By Mr. Findlay) And is that why you mentioned them in  
17 your deposition testimony?

18 A. Of course. And I would be -- as I said, I'm happy to do  
19 that now.

20 Q. Okay. No further questions. Thank you, Mr. Bakewell.

21 THE COURT: Thank you.

22 Any further questions, Mr. Hill?

23 MR. HILL: Yes, your Honor.

24 RECROSS-EXAMINATION

25 BY MR. HILL:

1 Q. Mr. Bakewell, what sections of your report did Ms. Rowe  
2 write?

3 A. Well, we worked together on it. Ultimately, as I  
4 explained, I'm the one who signed the report. And I'm  
5 responsible for it, and I'm the author. But I couldn't  
6 identify any specific words because she's my colleague and we  
7 interact.

8 Q. I'm going to ask you one more time. What sections did  
9 Ms. Rowe write of your report?

10 A. I couldn't tell you what section she wrote. It doesn't  
11 work that way.

12 Q. Do you still have your deposition there handy,  
13 Mr. Bakewell?

14 A. Yes.

15 Q. Okay. Take a look at Page 59, please. Take a look at  
16 line 8 specifically. We're going to look at Lines 8 through  
17 11.

18 (Video clip playing.)

19 QUESTION: What sections did Ms. Rowe write of your  
20 report?

21 ANSWER: Well, I wouldn't say that she wrote any  
22 sections. She didn't.

23 (Video clip ended.)

24 Q. (By Mr. Hill) Ms. Rowe didn't write any sections of your  
25 report?

1 A. Right. That's the next question. And it says my answer  
2 is: Ms. Rowe is an intelligent person, and she can read and  
3 write and speak, and so she has contributed towards the  
4 process, but I would not say they wrote any parts of the  
5 report in that way, sort of the way that you characterized  
6 it.

7 Q. Can you identify any of Ms. Rowe's contributions that  
8 you accepted in your report?

9 A. I can identify the fact that she is, as I just remarked  
10 a moment ago, one of my colleagues. She's a very intelligent  
11 person, and she and I worked together. I consider her to be  
12 a colleague and I trust her.

13 Q. Okay. Will you please look at Page 72 of your  
14 deposition? Let's look at Line 13. We're going to go  
15 through Line 25. I'll give you time to get there.

16 (Video clip playing.)

17                   QUESTION: Can you identify any of Ms. Rowe's  
18 contributions that you accepted and are in your report?

ANSWER: I can't think of anything in particular,  
because she's my colleague and we worked together. And,  
ultimately, I accepted responsibility, and do accept  
responsibility, for what's in here. So given that, as well  
as my descriptions about how the process works, I -- I don't  
think I can give a more precise answer to your question.

25 (Video clip ended.)

1 Q. (By Mr. Hill) Mr. Bakewell, I want to ask you a question  
2 again about Exhibit 1, if we can, of your report that we saw  
3 a little earlier?

4 MR. FINDLAY: Your Honor, I would object. This  
5 goes beyond my cross. My cross was very limited. Mr. Hill  
6 spent all of his time -- most of his time attacking  
7 Mr. Bakewell. It's got nothing to do with my redirect.

8 MR. HILL: Your Honor, I object to Mr. Findlay's  
9 sidebar regarding an examination to show this witness'  
10 credibility or lack thereof.

11 THE COURT: Both of y'all approach, please.

12 (Bench conference.)

13 THE COURT: We're not going to have any more  
14 sidebar comments about who's doing what up there. Just state  
15 your objection. State your response and move on. This does  
16 seem a bit outside the scope of the redirect.

17 MR. HILL: I'm going to ask him about his final  
18 conclusion and about his damage analysis, Your Honor. That's  
19 ultimately what he sponsored, and that's all I want to  
20 confirm and then his final summary.

21 MR. FINDLAY: But he's putting up an exhibit which  
22 he used. I didn't even refer to. And he's putting it up  
23 again. If he wants to ask him about his final opinion,  
24 that's fine, but he shouldn't be able to go back into the  
25 report again.

1                   MR. HILL: Your Honor, the -- the exhibit is a  
2 summary exhibit that he prepared presenting his final  
3 analysis. I want to put it up to ask about agreements he has  
4 with Mr. Green. Since we -- the point was made earlier that  
5 Mr. Green and he should focus on the financials.

6                   MR. FINDLAY: He had his opportunity to ask those  
7 questions on cross-examination, your Honor. He chose not to.  
8 He shouldn't be able to now get a second bite at -- at  
9 Mr. Bakewell for things that he had the opportunity to ask  
10 the first time.

11                  THE COURT: I'll allow it quickly.

12                  MR. HILL: Thank you, Your Honor.

13                  (Bench concluded.)

14 Q. (By Mr. Hill) Mr. Bakewell, let's look at Exhibit 1 to  
15 your report.

16                  MR. HILL: Can we blow up that section again?

17 Q. (By Mr. Hill) Now, Mr. Bakewell, this was your final  
18 conclusions in the report. You agree, even based on your  
19 analysis of the Amazon agreement, that analyzing it the way  
20 you chose to analyze it, it produces a royalty sum for Apple  
21 of \$28 million with a total lump-sum royalty of 113 million,  
22 correct?

23 A. No. That's incorrect. I don't believe -- and I  
24 explained this at length during my direct. I don't believe  
25 that the CCE/Amazon agreement is an appropriate benchmark.

1 Q. I understand. Do you --

2 A. As I explained in my report, if you include it amongst  
3 all of the agreements, then you can see the rate is -- it  
4 works out to be what it is. But I don't believe it should be  
5 included. That's not the way that I calculated damages, as I  
6 explained it right there (indicating).

7 Q. I understand. And what we discussed earlier is you  
8 disagree with Mr. Green about which agreements are comparable  
9 and which agreements are not comparable, correct?

10 A. Yes.

11 Q. But if we analyze the agreement that you chose to  
12 analyze it and we assume that, in fact, the Amazon agreement  
13 is comparable, you agree it produces a damages figure that is  
14 right in line with what Mr. Green opined, correct?

15 A. No, only if you make the same assumptions that he did.  
16 He only assumed that there were, I think, either between two  
17 or four patents that were relevant. And as I explained in my  
18 testimony, that there were 18 patents that were asserted. I  
19 have an -- against various entities. I have an opinion that  
20 relates to that. That yields a rate of something like 1 cent  
21 per unit.

22 And if you include the 200 to 300 patents that CCE owns,  
23 that rate is the same as my conclusion, .0025.

24 Q. Right. And that's because these numbers right here  
25 (indicating), the per-unit numbers right there, those aren't

1       Mr. Green's effective rate, is it?

2       A.     They are. They're the same assumptions. They are.

3       Q.     So you're saying to the jury -- they heard him testify  
4 earlier in the case -- that he opined that there would be  
5 fractions of a cent that would come out of each one of these  
6 agreements? That wasn't his testimony, was it?

7       A.     No, but those numbers were in his schedules.

8       Mr. Findlay asked him during cross-examination about that.  
9 He chose not to show those.

10      Q.     And when you chose to prepare a report that presented a  
11 summary of your analysis analyzing those reports and applying  
12 the weighted average that you claimed was appropriate, you  
13 included in that summary what the Amazon agreement indicates,  
14 correct?

15      A.     Yes. This is -- this is from my report. Absolutely.

16      Q.     And then let's look at one last point.

17           This was Mr. Green's final conclusion about damages?

18      A.     Yes.

19      Q.     Now, I understand you disagree about the royalty rate?

20      A.     And the form of the royalty. I believe it should be a  
21 lump sum.

22      Q.     Do you disagree with the first number?

23      A.     No. I think that we agree on that number.

24      Q.     So no dispute about the number of units at issue to  
25 which a royalty would apply?

1 A. Only if you're assuming the royalty is for past damages.  
2 And, in fact, for past -- if it's for past and future  
3 damages, as I wrote, I think Mr. Green and I agree on what  
4 the counting of the number of units is.

5 Q. And so 184 million units is the past units, correct?

6 A. Yes.

7 Q. And if we look at future units, it's a much higher  
8 number than that, isn't it?

9 A. Yes.

10 Q. Do you recall what the number is?

11 A. I think that the number -- I don't want to guess, but  
12 it's like 6- or 700 million, ballpark. It's like a ballpark  
13 number.

14 Q. So, if we take in a lump-sum paid-up royalty, we're  
15 going to analyze that with 600 million ballpark --

16 A. Just roughly.

17 Q. -- accused units, correct?

18 A. Yes.

19 MR. HILL: Pass the witness, Your Honor.

20 THE COURT: All right. Anything further,  
21 Mr. Findlay?

22 MR. FINDLAY: One question.

23 THE COURT: Sure.

24 REDIRECT EXAMINATION

25 BY MR. FINDLAY:

1 Q. Mr. Bakewell, I think Mr. Hill's questions, to me,  
2 sounded like they were going to Exhibit 1, that that was your  
3 opinion. Will you explain to the jury, what is your ultimate  
4 opinion if they get to the issue of damages at all in this  
5 case?

6 A. Sure.

7 So it's the same as what I wrote on the board. I think  
8 that is the more reasonable way to look at things. If you  
9 look at past damages, a lump-sum payment is \$500,000. And if  
10 you look at past and future damages, it's 1.75 million.

11 All of the licensing evidence in this case is a lump  
12 sum, involving past and future damages. And so that's why I  
13 believe the appropriate amount of a reasonable royalty is  
14 1.75 million fully paid-up lump sum.

15 MR. FINDLAY: No further questions. Thank you,  
16 Your Honor.

17 THE COURT: All right. Mr. Bakewell, you may step  
18 down.

19 THE WITNESS: Thank you, Your Honor.

20 THE COURT: Who will be your next witness?

21 MR. FINDLAY: May Mr. Bakewell be excused, Your  
22 Honor?

23 THE COURT: Any objection?

24 MR. HILL: No objection.

25 THE COURT: He may.

1 MR. FINDLAY: Thank you very much, your Honor.

2 MR. HOMRIG: Thank you, Your Honor. Apple calls  
3 Madhu Chaudhary.

4 THE COURT: Good afternoon. If you will please  
5 raise your right hand to be sworn.

6 (Witness sworn.)

7 THE COURT: Thank you. Please be seated.

8 MADHUSUDAN CHAUDHARY, DEFENDANT'S WITNESS, SWORN

9 DIRECT EXAMINATION

10 BY MR. HOMRIG:

11 Q. Good afternoon, sir.

12 A. Good afternoon.

13 Q. Would you please introduce yourself to the jury?

14 A. I'm Madhusudan Chaudhary. Friends and family call me  
15 Madhu.

16 Q. And, sir, where do you live?

17 A. I live in Campbell, California.

18 Q. Are you married?

19 A. I am.

20 Q. Have any kids?

21 A. Yes, I do. I have a six-year-old son.

22 Q. Now, sir, where are you from originally?

23 A. I'm from the western part of India.

24 Q. And did you grow up speaking English?

25 A. I did not.

1 Q. How did you learn?

2 A. I went to three different Catholic schools in India, and  
3 in those Catholic schools is where I learned to speak  
4 English.

5 Q. Now, sir, after that did you go to college?

6 A. I did.

7 Q. And did you graduate with -- with a degree?

8 A. I did graduate with a degree.

9 Q. So, sir, if you would, please tell us where you went to  
10 college and what kind of degree you have.

11 A. So I went to college in Indian Institute of Technology  
12 Bombay. And I have a bachelor's of technology in electrical  
13 engineering.

14 Q. All right, sir. Now, why did you decide to become an  
15 engineer?

16 A. So my father was a telegraph operator. And when I was a  
17 kid, I worked with him at work, and he would be sending those  
18 telegrams all over the world. And as I kid I would ask him,  
19 Dad, where are you sending these telegrams to?

20 And he would say, this one goes to Delhi, this one goes  
21 to Bombay, this one goes to New York.

22 I was fascinated that using two wires you can send  
23 messages all across the world. Even today I joke with him  
24 like, Dad, I'm working on the latest version of the  
25 telegraph.

1 Q. Thank you for sharing that with us, sir.

2 Now, let me ask you. Do you have any additional  
3 degrees?

4 A. I do.

5 Q. And where -- where from?

6 A. I have a master's in electrical engineering from  
7 University of California San Diego.

8 Q. All right, sir. Now, as I understand it, while you were  
9 there you met a gentleman named Dr. Tony Acampora; is that  
10 right?

11 A. That is correct.

12 Q. How did you meet him?

13 A. So I took a course from Dr. Acampora.

14 Q. How did you do?

15 A. I think I did okay.

16 Q. Okay. That's good.

17 Now, were you a full-time student at that time?

18 A. I was a part-time student.

19 Q. Where did you work?

20 A. I worked at Qualcomm and Kyocera Wireless while I was  
21 doing my master's.

22 Q. All right. Now, while you were at Qualcomm, did you  
23 work on LTE technology?

24 A. I did not.

25 Q. What did you work on?

1 A. I worked on the earlier versions of -- of wireless  
2 communication technologies. They were 2G and 3G.

3 Q. Now, sir, after you got your master's, what did you do  
4 next?

5 A. I started working for Apple.

6 Q. Why did you pick Apple?

7 A. So before joining Apple, I had already spent about nine  
8 years in the mobile industry. I was very passionate about  
9 mobile phones. And when Apple came up with the first iPhone,  
10 I felt it was very special, and I wanted to contribute in  
11 whatever capacity that I can.

12 Q. Now, we're going to visit a little bit about your  
13 work at Apple today and some of the technology that you  
14 work on.

15 Before we get to that, let me just ask you, how long,  
16 all told, have you been an engineer?

17 A. I've been an engineer for 17-plus years.

18 Q. And during your time at Apple, have you earned any  
19 patents?

20 A. I have, sir.

21 Q. About how many?

22 A. I have about 20 patents.

23 Q. And what general field are they in?

24 A. They are all in mobile communication.

25 Q. All right. Now let's turn to your current role at

1       Apple, okay? Is that all right with you, sir?

2       A.    That is all right.

3       Q.    Okay. All right. So what's your current job title?

4       A.    So I'm a senior manager at Apple.

5       Q.    And what's your role as a senior manager at Apple?

6       A.    I'm responsible for software for cellular technologies.

7       Q.    Okay. Well, about how many folks do you manage, sir?

8       A.    I have a team of 20 engineers working for me.

9       Q.    And what type of cellular technologies is your team  
10      responsible for?

11      A.    So my team is responsible for GSM, WCDMA, HSPA, EVDO,  
12      and LTE.

13      Q.    Now, what specifically does your team do with those  
14      technologies?

15      A.    So my team is primarily responsible for integrating the  
16      Qualcomm chip. While we are integrating and when we are  
17      testing the mobile phone or the iPhone, if you find any  
18      issues, then my team will be responsible for working with  
19      Qualcomm to resolve that.

20           We are looking at the code, and if we feel there is an  
21      issue, we will reach out to Qualcomm. They will change the  
22      software and give the newest version of software to us.

23      Q.    Now, sir, what does the Qualcomm chip that you're  
24      talking about -- what does it do generally?

25      A.    So it provides communication to the iPhones when the

1 device is using, let's say, AT&T or the Verizon network.

2 Q. Now, let me ask you this, sir -- let me ask you this:

3 How much control, if any, does Apple have over the design of  
4 the Qualcomm chips that you're speaking of?

5 A. So we don't have control. We can certainly influence  
6 because we are customers.

7 Q. Well, sir, why does Apple buy these chips, these  
8 cellular chips, from Qualcomm?

9 A. Apple's core expertise is not building cellular chips.  
10 Qualcomm is one of the best in the industry when it comes to  
11 cellular chips. So it makes sense for Apple to buy the chip  
12 from Qualcomm.

13 Q. Now, we've been talking about Qualcomm chips; but, as I  
14 understand it, your team is a software team. What role does  
15 software play in all of this?

16 A. So software is a set of instructions that is given to  
17 the Qualcomm chip to implement the cellular technology.

18 Q. Okay. Now, sir, does your team write the software for  
19 the Qualcomm chip that's used in Apple's iPhone and iPads?

20 A. So, for the most part, the software related to LTE all  
21 comes from Qualcomm, along with the chip. We do make changes  
22 on top of it.

23 Q. Okay. Well, let me ask you a little bit about that at a  
24 general level, okay?

25 A. Sure.

1 Q. So, first of all, are you familiar with the term "source  
2 code"?

3 A. I am.

4 Q. All right. What's source code?

5 A. It's human readable instructions that are given to the  
6 chip.

7 Q. And does Apple have a copy of the source code for the  
8 software that comes on the Qualcomm chip?

9 A. Apple does have a copy that comes along with the  
10 Qualcomm chip.

11 Q. Well, what modifications, if any, can Apple make to that  
12 Qualcomm source code?

13 A. Can I give an example?

14 Q. Yes, please.

15 A. So we all know that when we go on a camping trip, the  
16 cellular coverage is very poor. Sometimes you will see one  
17 bar, and sometimes you will see zero bar, or there is no  
18 service. The device cannot make a call.

19 But you would also experience that the battery of the  
20 device drains really quick. That is because the software is  
21 aggressively looking for a network, but there is no network  
22 there.

23 Now, we have a motion sensor in the iPhone, so we came  
24 up with a smart algorithm where if you are in the campsite,  
25 you're not really going too far, the device knows it, and it

1       won't scan for networks aggressively.

2           But the moment you jump into the car to drive back home,  
3 we will start -- the device will start looking for a network.  
4 And that is how we preserve battery. So that would be an  
5 example of a software change that my team would make.

6 Q. Okay. Thank you.

7           Now, before we go on, let me ask you this generally just  
8 so folks have a perspective. Sir, does your team work with  
9 all of the source code for the software that's on iPhones and  
10 iPads?

11 A. My team does not. If you look at the iPhone, there are  
12 many different apps. If you want to know the weather, there  
13 is an app for weather, but there is a team that specializes  
14 in writing that software.

15           There's an app to get stocks, and there's a team that  
16 specializes in writing that app. There is an app for mail.  
17 There is an app for SMS. There is an app for making a phone  
18 call. And there are teams that specialize in writing that  
19 software.

20           My team's expertise is in the software that is given by  
21 Qualcomm that runs on the Qualcomm chip.

22 Q. And we're going to visit, I think, in detail about that  
23 software; but first let's change gears just for a minute.

24           One of the issues in this case has to deal with -- or at  
25 least one of the things folks have heard about is LTE. So

1 let me first ask you, was Apple involved in developing LTE?

2 A. Not to my knowledge.

3 Q. All right. But are you familiar with the LTE standard?

4 A. I am, sir.

5 Q. How so?

6 A. So when we integrate the Qualcomm chip and we are  
7 testing a particular function of the Qualcomm chip, to  
8 understand that function, I need to refer to the LTE  
9 standard, and that is how I got familiar with the LTE  
10 standard.

11 Q. Why do you need to refer to the LTE standard when you're  
12 working on aspects of the code for the Qualcomm chip?

13 A. So, if there is a test case that is failing, to  
14 troubleshoot, I need to consult the LTE standard so that I  
15 can work with Qualcomm and get those issues fixed.

16 Q. Now, sir, does the standard define everything about how  
17 devices must communicate over an LTE network?

18 A. Not everything, but most of it.

19 Q. Okay. Now, I think the feature of LTE that the jury has  
20 heard the most about in this case is buffer status reporting.

21 Are you familiar with buffer status reports?

22 A. I am, sir.

23 Q. All right. I'd like to visit with you about how that  
24 works for an iPhone and an iPad. Did you prepare some slides  
25 for this?

1 A. I have.

2 Q. Okay.

3 MR. HOMRIG: Mr. Schmoller, would you call those  
4 up, please?

5 Thank you.

6 Q. (By Mr. Homrig) All right, sir. Here's the first slide  
7 you've got.

8 Now, the first thing you're going to have to do is  
9 introduce us to this young man.

10 A. Yeah. So here's my son, and he's 6 years old. His name  
11 is Anay. And --

12 Q. Please go ahead. Sorry.

13 A. So I took this picture on the Labor Day weekend. We  
14 traveled to San Diego, me, my son, and my wife, and my dad,  
15 his grandfather, loves to get the kids -- the picture of the  
16 grandkid.

17 So I need to send this -- I already sent this picture to  
18 his grandpa.

19 Q. Okay. Now, can you describe for us, when you did that,  
20 how the process for sending the picture worked?

21 A. Right. So the device, the iPhone has to communicate  
22 with the network.

23 Now, the network does not know that I have a picture to  
24 send. In order for the network to grant the sources that are  
25 necessary, the iPhone will send a BSR to the network.

1 Q. Okay. Now I want to walk through a little bit about  
2 that process, okay?

3 All right. So let's take a look at this slide. Why did  
4 you include this slide, sir?

5 A. So this is the iPhone that most of us have seen. If you  
6 look at the iPhone, there are a lot of apps on it, which are  
7 integral for different purposes. Like there's a stocks app;  
8 there's a weather app; there's an app for maps.

9 All of these apps run on Apple's own processor, but all  
10 of them need Internet connectivity to function. They need  
11 the Internet to get the stocks app. They need the Internet  
12 to download the weather. They need the Internet to send  
13 e-mails.

14 Q. Now, sir, while we're talking about applications, or  
15 apps as I think you called them, let me ask you a couple of  
16 questions about one of those, and that's FaceTime:

17 Sir, does the format of BSRs affect the performance of  
18 FaceTime?

19 A. It does not.

20 Q. Why not?

21 A. BSR is extremely small, compared to the amount of data  
22 that is sent to the network; hence, it won't impact  
23 performance.

24 Q. Now, sir, does FaceTime work on 3G?

25 A. It does. FaceTime works on 3G.

1 Q. Okay. All right. Thank you, sir.

2 Let's move on to the next slide. What are you  
3 illustrating here?

4 A. So let's look at the insides of the iPhone. And you can  
5 see various components that goes into building the iPhone.

6 Q. Okay. Can you identify any of them for us?

7 A. I think the biggest one is the battery, the black  
8 rectangle that you see. But in order to see -- I wanted to  
9 show the Qualcomm chip; but in order to see that, we will  
10 have to zoom in a little.

11 Q. Okay. Well, let's head to the next slide. What are we  
12 seeing here, sir?

13 A. So this is where all the chips are located. You could  
14 see one with an Apple logo. And it says A6. That is the  
15 Apple chip on all the applications that I mentioned around.

16 But they need connectivity to the network and that is  
17 provided by the Qualcomm chip.

18 Q. Where is the Qualcomm chip?

19 A. The Qualcomm chip is at the bottom. So let's zoom in a  
20 little bit more.

21 So that (indicating) is the Qualcomm chip, and that  
22 provides connectivity to the iPhone.

23 Q. All right, sir. Thank you.

24 Let's move on to the next slide. What are you  
25 illustrating here?

1       A.     So the Qualcomm chip, it provides connectivity to the  
2     iPhone when it's working on cellular network. So in the  
3     example that I gave before, if I wanted to send a picture,  
4     the Qualcomm chip will have to send a BSR to the network.

5       Q.     Well, how does -- how is the BSR transmitted?

6       A.     So BSR is transmitted in something called as the PDU.  
7     You can take a picture, and the picture will split into  
8     multiple PDUs. And the BSR will be transmitted in the PDU  
9     along with all the other data.

10      Q.     Now, how large is a BSR?

11      A.     BSR is very small. To put things in perspective, the  
12     picture that I showed is more than 2 megabytes. A small BSR  
13     is 2 bytes. A long BSR is 4 bytes. So to put things in  
14     perspective, this picture is a million times bigger than a  
15     small BSR and about half a million times bigger than a long  
16     BSR. So BSR is extremely small.

17      Q.     Now, sir, one -- one more question in the same line.

18     Let me ask you, does your carrier charge you for BSR data?

19      A.     Carriers don't charge for BSR. They will charge for  
20     sending the picture, though.

21      Q.     All right. Now let's --

22                    MR. HOMRIG: If you would pull that down, sir.

23                    Thank you very much.

24      Q.     (By Mr. Homrig) So I'd like to go back to LTE and the  
25     standard setting that you mentioned.

1           Is there a part of the LTE standard that relates to BSR?

2 A.   There is.

3 Q.   And -- and what part of the LTE standard is that, sir?

4 A.   So document 36.321, Section 5.4.5 talks about the BSR.

5 Q.   Okay.

6           MR. HOMRIG: Can we call up trial Exhibit 553,

7 Mr. Schmoller?

8           And if you'd call up Page 26, please.

9 Q.   (By Mr. Homrig) All right. Sir, is this the section  
10 that you were referring to?

11 A.   This is the section I referred to.

12 Q.   Now, if we turn to the next page, Page 27, do you see  
13 part of the standard that relates to choosing between short  
14 and long BSRs?

15 A.   I do.

16 Q.   And where is that, sir?

17 A.   It's under subtitle for regular and periodic BSR.

18 Q.   Okay. Now, for regular and periodic buffer status  
19 reports, what does the standard say about how to choose long  
20 and short?

21 A.   It outlines one condition, which is, if there is more  
22 than one logical channel group that has data available for  
23 transmission, send long BSR; otherwise, send short BSR.

24 Q.   So first let me ask you, sir: What's an LCG, or logical  
25 channel group, as I think you just said? What is that?

1       A. So all data are not equal. The devices prioritize  
2 different data. For example, if you are sending a text or  
3 making a voice call, that data is more important than, let's  
4 say, sending an e-mail. To prioritize there are different  
5 logical channels and the network will configure different  
6 groups. So if you have more than one logical channel group  
7 that is data, that is when the device will send long BSR.

8       Q. Now, are logical channel groups in the standard related  
9 to buffers?

10      A. They are.

11      Q. How so?

12      A. So different logical channel groups will have different  
13 buffers. The device will monitor the buffers to decide  
14 whether it needs to send a BSR and what kind of BSR it should  
15 send.

16      Q. Now, sir, we've been talking about the decision point  
17 whether or not multiple logical channel groups have data for  
18 choosing short and long for regular and periodic. So, for  
19 those kinds of BSRs, are there any other criteria in the  
20 standard?

21      A. No.

22      Q. Let's move down the page just a bit. There is a section  
23 referring to padding BSRs. Do you see that, sir?

24      A. I do.

25      Q. Now, would you remind -- let me ask -- let me withdraw

1       the question and say, sir, would you describe for the jury  
2       what a padding BSR is?

3       A.     So when the device is sending data to the network, after  
4       it is done filling the PDU with useful data, if there is any  
5       extra available space, it will include a BSR; and that is  
6       what a padding BSR is.

7       Q.     Now, sir, what does the standard say about how long or  
8       short is determined for padding BSRs?

9       A.     The standard says it will decide based on the number of  
10      padding bits that are available.

11      Q.     Now, is the decision of short or long, based on anything  
12      else -- or excuse me. Let me withdraw the question. I'll  
13      get to that in just a minute.

14      A.     Sure.

15      Q.     Let me ask you first, though: We were talking about the  
16      decision point you just mentioned, does that have anything to  
17      do with buffers?

18      A.     It does not.

19      Q.     Okay. Now, is there any other criteria for choosing  
20      short or long for padding BSRs in the standard?

21      A.     Standard does not have any other criteria.

22      Q.     Okay. Now, if we look down a little bit, though, you  
23      see on the indented piece, the first one it says "LCG"?

24      A.     I do.

25      Q.     Does that relate in the standard to choosing short or

1 long padding BSRs?

2 A. It does not.

3 Q. Okay. What does that relate to?

4 A. So it's checking for space to find out what kind of  
5 short BSR to send. It will either decide to send a short BSR  
6 if there is data in one logical channel group or it will  
7 decide to send a truncated BSR, which is the same format as a  
8 short BSR, if there is more than one logical channel group  
9 that has data.

10 Q. All right, sir. So I think that winds up my questions  
11 on the standard, and I'm going to ask you some questions  
12 about Apple products.

13 MR. HOMRIG: Your Honor, I think we're going to get  
14 into confidential information, so if we may seal the  
15 courtroom, please.

16 THE COURT: All right. Let's seal the courtroom.

17 Ladies and Gentlemen, if you're not covered by the  
18 protective order, I need to ask you to leave at this time.

19 (Courtroom sealed.)

20 (This portion of the transcript is sealed and filed  
21 under separate cover as Sealed Portion No. 14.)

22 (Courtroom unsealed.)

23 Q. (By Mr. Curry) All right. I'd like to show you -- these  
24 are the topics that you were being asked about on  
25 cross-examination. Do you remember being asked about No. 4?

1 A. I do.

2 Q. All right. Now, do you see in No. 4 where it says  
3 identification, and then it goes on to list hardware and  
4 software and, ultimately, refers to source code?

5 A. I do.

6 Q. All right. Now, did you understand that -- I guess the  
7 first question is, did you understand that Topic No. 4  
8 relates to identifying sort of what it is that does buffer  
9 status reporting, generally?

10 A. Yes. When I read this, I do understand that it means  
11 identification.

12 Q. Now, do you recall, was Topic 4 -- was that -- I mean,  
13 did you talk only about identification or were you asked  
14 questions about other issues relating to how buffer status  
15 reporting works in Apple's products?

16 A. During the deposition?

17 Q. Yes.

18 A. So during the deposition, I had to answer multiple  
19 questions. And I was able to identify which devices have ID  
20 in it, which software has ID in it. I was also able to  
21 answer all the questions around BSR, different kinds of BSR,  
22 when they are sent, how the code decides that. So I did  
23 answer those questions.

24 Q. Okay. Now -- now I wanted to ask you because I think  
25 the suggestion was maybe you didn't answer any of CCE's

1 || questions. Was that right?

2 A. I think that suggestion won't be correct because I did.

3 Q. Okay. Did you testify during your deposition generally  
4 about how buffer status reporting works?

5 | A. I did.

6 Q. Okay. Were the questions that you weren't able to  
7 answer focused on very specific functions in the source code?

8 A. Those were the only ones that I did not answer.

9 Q. Now, when you did testify about how buffer status  
10 reporting works, was that based on your team's investigation  
11 that you described during your direct examination?

12 A. The question that I answered was both based on my own  
13 experience and that of my team.

14 || Q. All right.

15 MR. HOMRIG: I pass the witness, Your Honor. Thank  
16 you.

THE COURT: Okay. Any recross?

18 || RECROSS-EXAMINATION

19 | BY MR. CURRY:

20 Q. When is the first time someone at Apple checked the code  
21 to see how BSRs work, relative to the '820 patent?

22 || A. That would be around the deposition time.

23 Q. Was that the

A. That's right.

25 Q. And that was

For more information about the study, please contact Dr. Michael J. Hwang at (310) 206-6500 or via email at [mhwang@ucla.edu](mailto:mhwang@ucla.edu).

1 A. That was when it was reviewed.

2 Q. Four years after Apple first learned about the '820  
3 patent?

4 A. I think Apple did respond in 2012 -- are you referring  
5 to the 2012 when Apple knew about the patent?

6 Q. I am asking when is the first time someone at Apple  
7 checked the code to see how BSRs work relative to the '820  
8 patent.

9 A. I think we have a strong legal team that we totally  
10 trust; so in 2012 they were the ones who looked at the  
11 patent. And if they felt the need, they would have asked us.  
12 They did not feel the need, and I trust them with that  
13 decision.

14 MR. CURRY: Pass the witness.

15 THE COURT: Anything further?

16 MR. HOMRIG: No further questions, Your Honor.

17 Thank you.

18 THE COURT: All right. You may step down.

19 Ladies and Gentlemen of the Jury, we're going to  
20 take our afternoon break. We'll be in recess for 15 minutes.

21 COURT SECURITY OFFICER: All rise.

22 (Jury out.)

23 (Recess.)

24 (Jury in.)

25 THE COURT: Who will be your next witness?

1 MR. HOMRIG: Your Honor, as an initial housekeeping  
2 matter, may Mr. Chaudhary be excused? I understand there's  
3 no objection.

4 MR. CURRY: No objection.

THE COURT: Yes.

6 MR. HOMRIG: Thank you, Your Honor.

7 ||| Apple calls Mark Frappier.

8                           THE COURT: Please raise your right hand to be  
9 sworn.

10 (Witness sworn.)

11 MR. HOMRIG: Thank you, Your Honor.

12 || MARK FRAPPIER, DEFENDANTS' WITNESS, SWORN

DIRECT EXAMINATION

14 || BY MR. HOMRIG:

15 Q. Good afternoon, sir.

16 A. Good afternoon.

17 Q. Would you introduce yourself to the jury, please?

18 A. Yes. Good afternoon. My name is Mark Frappier.

19 Q. Would you tell us a little bit about your family and  
20 background?

21 A. Sure.

22 Let's see. My wife, Suzanne, and I have been married  
23 for 30 years. We've got two children. I've got two  
24 daughters. The oldest has graduated from college and is  
25 working and off the payroll, and my younger one is a junior

1 at Tulane.

2 Q. Thank you.

3 Now, before we get started, let me ask you, did you have  
4 any slides prepared to aid with your testimony today?

5 A. Yes, I did.

6 Q. All right.

7 MR. HOMRIG: Let's call those up.

8 Q. (By Mr. Homrig) Okay. Now, sir, to get a sense of your  
9 background, would you first tell us where you went to school?

10 A. Yes. I went to Northeastern University in Boston,  
11 Massachusetts.

12 Q. All right. And is it right that you studied electrical  
13 engineering there?

14 A. Right. In 1978, I got a Bachelor of Science degree in  
15 electrical engineering.

16 Q. And, now, what do you do for work?

17 A. Currently?

18 Q. Well, actually, that's a fair question. Let's start  
19 back at the beginning.

20 So what did you do as you were studying or after you  
21 were studying electrical engineering?

22 A. Okay. My first job associated with computers and  
23 software was, as I was a student at Northeastern, I worked as  
24 a co-op student, and I was working at the physics lab at  
25 Mass. General Hospital.

1       I was interested in studying biomedical engineering, and  
2 so I worked in a lab that did medical engineering equipment,  
3 so CAT scans and PET scans and things like that.

4 Q. And what did you do after that?

5 A. After that, after I graduated, I went to work for a  
6 company called Data General. And Data General is a company  
7 that was making minicomputers at the time.

8       And then I worked in an organization within Data General  
9 that built microprocessor-based systems. So I was there  
10 designing microprocessors and writing software and source  
11 code associated with that.

12 Q. Okay. And then how about after that, sir?

13 A. After that, subsequently, I went to a company -- it was  
14 a startup company in California called Rational that was  
15 eventually acquired by IBM.

16       And Rational is a company that was developing software  
17 development environments so that -- basically, tools for  
18 computer programmers so that they could use these tools to  
19 make them more efficient at building their software.

20       And my initial responsibilities there, was to build part  
21 of the computer system that we were building; and,  
22 eventually, it moved into more software development  
23 activities.

24 Q. Okay. Now, I see you listed on your slide that you were  
25 involved in developing military command and control systems.

1           What do you mean by that?

2       A. Well, Rational's products and the languages that we  
3           supported were directed to the Department of Defense. And so  
4           the people that would use our products were big DoD,  
5           Department of Defense, contractors, like IBM and TOW and  
6           Rockwell.

7           And one of the projects that I worked on was called the  
8           Military -- Worldwide Military Command and Control System.

9           So this is a big system that the military uses to  
10          communicate worldwide, just like in its name.

11          They were renovating that system completely and using  
12          our products to do that, and I was consulting with them on  
13          not just using our products, but how they should build their  
14          software.

15       Q. All right. And you also list FAA modernization. What  
16          does that refer to?

17       A. The same kind of thing. In the late '80s, the air  
18          traffic control system was pretty fragile and needed to be  
19          reworked, and so I was helping the software engineers that  
20          were doing that, helping them with the architecture and  
21          design of their system and with the implementation of parts  
22          of it.

23       Q. Now, in the course of the experience that you've  
24          described, were you working with source code frequently?

25       A. Yes. There was a combination of very high-level things

1 where I would help them with design and architecture, but I  
2 would definitely help them with source code to understand  
3 tradeoffs they were making by programming things one way  
4 versus another way.

5 Q. All right. Now, then I think after that on your slide,  
6 I see you've got 22 years writing and analyzing source code.

7 What is that referring to?

8 A. Yes. After my industry experience, working directly in  
9 industry, I've been doing many projects that involve source  
10 code analysis, and I've analyzed source code having to do  
11 with many different things, communications equipment, with  
12 networking equipment, with disk drives.

13 And, basically, my projects involved me typically  
14 reviewing and understanding how source code works and  
15 explaining it to someone else in lay terms in one way or  
16 another.

17 Q. All right.

18 A. And the writing of source code is -- I've actually  
19 written and commercially sold software products.

20 Q. All right. Thank you.

21 Now, in the course of that work, have some of the  
22 matters you've worked on been litigation matters?

23 A. Yes. I've worked on a lot of litigation matters over  
24 that time.

25 Q. All right. Have you always been retained by one side or

1 the other, a plaintiff or defendant?

2 A. I've worked for both plaintiffs and defendants.

3 Q. Have you ever worked for Apple before?

4 A. I have. I've worked for Apple -- my first project was  
5 back in 2010.

6 Q. Okay. Have you ever testified for Apple before?

7 A. No. This is the first time I've testified for Apple.

8 Q. All right. So let me ask you, sir, in the course of  
9 your work working on litigations, how many matters overall  
10 for anybody have you worked on?

11 A. Somewhere around 65 matters.

12 Q. All right. Now, of those, how many were for Apple?

13 A. I think it's 13.

14 Q. All right. Now, focusing on this case in particular,  
15 about how many hours have you spent working on this matter?

16 A. I think prior to coming here, I had spent a little over  
17 a hundred hours working on the matter. And then I've been in  
18 court every day while I've been here. So I think in total on  
19 the matter up to this point is around 150 hours.

20 Q. Okay. And then how much have you billed Apple for the  
21 work that you've done on this case, approximately?

22 A. Let's see. I bill out at \$325 an hour, so that's -- I  
23 guess that total would be roughly \$45,000.

24 Q. All right. And one -- one last question about Apple.

25 Would you say that a lot of your income comes from working on

1 Apple matters?

2 A. This year, I think about a third of my income is from  
3 working on Apple matters. Other years it varies. This is a  
4 particularly -- this is the year I've done particularly a lot  
5 of work for Apple.

6 Q. Well, how many reports have you done this year?

7 A. How many reports have I done for Apple?

8 Q. Yes, sir. This year.

9 A. I think two.

10 Q. Okay. Now, you mentioned that you have, you know, done  
11 other work. Let me ask you this: Who else -- what other  
12 companies have you done litigation matters for?

13 A. That's quite a long list but -- let's see. I've worked  
14 for Samsung, I've worked for HTC, I've worked for LG, I've  
15 worked for Intellectual Ventures, I've worked for Qualcomm,  
16 Broadcom, Extreme Networks, Gateway, Acer. It's a -- it's a  
17 lot longer than that, but that's just what I can remember  
18 right now.

19 Q. All right. Thank you, sir.

20 Do you recognize any competitors of Apple in that list  
21 you just gave?

22 A. I think there's a few, yes.

23 MR. HOMRIG: Your Honor, Apple offers Mr. Mark  
24 Frappier as an expert in computer source code.

25 MR. CURRY: No objection.

1                   MR. HOMRIG: Thank you, your Honor.

2 Q. (By Mr. Homrig) Now, sir, let me ask you a little bit  
3 about what you did in terms of your work on this case.

4                   What -- what kind of materials did you consider?

5 A. Well, let's see. In this case I reviewed the source  
6 code that's at issue in this matter. I reviewed the standard  
7 as it relates to buffer status reports. I read some  
8 deposition transcripts. I read the report of Mr. Jones. And  
9 those are the things I think I've reviewed.

10 Q. All right. Now, I see you've listed here on this slide  
11 that you discussed your analysis with Dr. Acampora. What --  
12 what do you mean by that?

13 A. Let's see. Right after I was done with my review and  
14 understood how the source code worked, I had a phone call  
15 with Dr. Acampora. We talked about my understanding of how  
16 the source code works.

17 Q. Okay. Now, how did you understand your role on this  
18 case?

19 A. My -- my understanding is my role is to be the person  
20 that understands the source code and explain that source code  
21 and make sure that it's -- that we accurately describe how it  
22 works.

23 Q. All right. Now, did the '820 patent influence any part  
24 of the work that you did on this case?

25 A. I did not read the '820 patent up and to the point of --

1 let's see. I had already done my source code review. I had  
2 already spoken to Dr. Acampora. And so my source code review  
3 is independent of looking at the '820 patent.

4 Q. All right. Now, have you attended this trial  
5 throughout?

6 A. I have.

7 Q. All right.

8 MR. HOMRIG: Your Honor, we're about to dive into  
9 material that is confidential, so we would ask to seal.

10 THE COURT: All right. We're going to seal the  
11 courtroom at this time. If you are not covered by the  
12 protective order, please exit.

13 (Courtroom sealed.)

14 (This portion of the transcript is sealed and filed  
15 under separate cover as Sealed Portion No. 15.)

16 (Courtroom unsealed.)

17 THE COURT: We're only going to go for about 15  
18 more minutes, and we'll let you-all go at 5:00.

19 Dr. Acampora, please raise your right hand to be sworn.

20 (Witness sworn.)

21 ANTHONY ACAMPORA, Ph.D., DEFENDANTS' WITNESS, SWORN

22 DIRECT EXAMINATION

23 BY MR. HOMRIG:

24 Q. Good afternoon, sir.

25 A. Good afternoon.

1 Q. Would you introduce yourself to the jury, please?

2 A. Yeah. My name is Anthony Acampora.

3 Q. Would you tell us a little bit about your background?

4 A. Sure. I was born in Brooklyn, New York, a long time  
5 ago; and I met my wife in New York. We've been married to  
6 each other for 48 years, raised our two children in suburban  
7 New Jersey.

8 Eventually, the children grew up, flew the coop, went to  
9 college, and settled on the West Coast just outside of San  
10 Francisco. And a few years later, Morgan and I joined the  
11 children on the West Coast, but we make our home in sunny  
12 San Diego.

13 Q. Thank you, sir.

14 Now, one of the things I'd like to do this afternoon is  
15 explore a little bit about your credentials, okay?

16 A. Sure.

17 Q. All right. Now, did you -- first, before I get into  
18 that, did you prepare some slides to help illustrate your  
19 testimony?

20 A. I did.

21 Q. Thank you.

22 All right, sir. So let me first ask you, what -- what's  
23 your educational background?

24 A. I received my Bachelor of Science, Master of Science,  
25 and Ph.D. all in electrical engineering, all from the

1 Polytechnic Institute of Brooklyn.

2 Q. Now, sir, were you a full-time student at that time when  
3 you were getting your Ph.D.?

4 A. Well, I was a full-time student while I was getting my  
5 bachelor's degree but not while -- well, actually, I was a  
6 full-time student getting my master's and Ph.D. as well, but  
7 I was also working. I was both a full-time employee and a  
8 full-time student.

9 Q. Now, where did you work at that time?

10 A. I started my career in 1988 -- I'm sorry -- 1968 at AT&T  
11 Bell Laboratories in New Jersey.

12 Q. For those of us who aren't familiar, what kind of  
13 business was Bell Labs in?

14 A. Bell Labs was the research and development -- while I  
15 was there, was the research and development unit of the  
16 nationwide Bell system way back when, there was Ma Bell.

17 Ma Bell ran the local operating companies and provided  
18 service to your homes, ran the long distance phone network,  
19 even had a manufacturing unit called Western Electric that  
20 provided all the equipment that went into the telephone  
21 plant, right down to our telephone handsets.

22 Bell Labs was the research and development unit for that  
23 system. AT&T employed a million people; 30,000 of those were  
24 at Bell Labs; about 10 percent or 3,000 people performing  
25 basic research on new technologies that might mature into

1 some telecommunication product and service.

2 And management at Bell Labs asked to develop the -- or  
3 design and develop the equipment that went into the -- that  
4 went into the telephone company.

5 Q. Now, what did you do, sir, when you first joined Bell  
6 Labs?

7 A. Well, like everyone else, I joined as a member of  
8 technical staff, and while I was still in college working on  
9 my master's degree and Ph.D, I was assigned to the safeguard  
10 of missile site radar that was part of the safeguard  
11 anti-ballistic missile system, which was a system designed to  
12 track -- or detect, track, and then launch missiles to  
13 intercept incoming warheads before they struck American  
14 cities. I was working on the radar that coordinated a lot of  
15 this.

16 Q. All right. Now, I also see you list communications  
17 satellite research. What -- what does that refer to?

18 A. When I received my Ph.D. I transferred to the basic  
19 research area in Bell Labs, and I was initially involved in  
20 research on communication satellites, these orbiting  
21 platforms that serve as a pretty good relay station for radio  
22 signals that can be sent from a base station and received  
23 someplace else. So it's a good platform for long distance  
24 communications.

25 Q. All right. And then I see -- I'm going to skip down a

1       little bit. I see you were a department head at Network  
2 Systems Research. Would you describe that?

3       A. Yeah. So that department consisted of approximately 15  
4 people. It varied over time. But about 15 people, almost  
5 all of them were Ph.D.'s, and we ended up doing basic  
6 research in a variety of telecommunication topics, indoor and  
7 outdoor wireless communication systems. We did research on  
8 fiber optic networks, the buried cabling that provides most  
9 of the backbone, not only transcontinentally but  
10 intercontinentally as well.

11           And we also were doing some work on tactic switching  
12 technologies and core technologies that eventually found  
13 their way into the Internet.

14       Q. And then center director, sir. I see that listed, too.

15           What -- what were you doing there?

16       A. Yeah. So that was about an 80-person epic but divided  
17 into basic research and exploratory development. We tried to  
18 bring proof of concept prototypes of some of the innovations  
19 coming out of our research minds. And there we were working,  
20 again, on fiber optic networks, Internet technologies.

21           And one other thing, digital signal processes. These  
22 are computer chips. They are like -- they're like bearer  
23 computer, but they're designed to do one thing very well,  
24 process numbers. They're basically number-crunching  
25 machines. And we find these DSPs used ubiquitously in

1       telecommunications today. In fact, there were DSP -- there  
2       were DSPs inside some of the chips that we've heard  
3       referenced to in this case so far.

4       Q. Now, what -- what led you to leave Bell Labs in 1988?

5       A. At the time I was being recruited -- in fact, I had been  
6       recruited -- was being recruited by Columbia University for  
7       about a year. And in 1988, I decided to leave Bell Labs and  
8       join the faculty at Columbia as a full professor in  
9       electrical engineering for a couple of reasons.

10           First, I can teach students, which I wasn't doing at  
11       Bell Labs. I can continue my own research program, which I  
12       was doing at Bell Labs. But what really attracted me was the  
13       opportunity to serve as a director of the Center for  
14       Telecommunications Research. That was a -- that was a real  
15       deal, and that's the reason I left Bell Labs.

16       Q. What was the -- what was the Center for  
17       Telecommunications Research? What -- can you describe a  
18       little more about it?

19       A. Yeah. Let's go with the CTR. So --

20       Q. Fair enough.

21       A. -- it's a lot less of a tongue twister.

22           So the -- the CTR was what we called an engineering  
23       research center. It was funded partly by the National  
24       Science Foundation, but this program was under the umbrella  
25       of NSF.

1       Now, what is NSF? That's the part of the Federal  
2 Government that provides basic research to universities coast  
3 to coast. And a lot of good work has come out of the some of  
4 the research that NSF funded.

5       But in the mid-'80s NSF was basically looking for a  
6 better mechanism to couple the research that it was funding  
7 with commercial practice, so it created this engineering  
8 research center program.

9       And today I think there are somewhere around 30 ERCs  
10 coast to coast, but the center at Columbia University was in  
11 first class, they're running -- six created at that time, one  
12 of them in telecommunications.

13       And the whole idea was to attract funding from industry,  
14 but not just funding, participation. So we would host  
15 visitors. We provided offices. And the idea was to work  
16 collaboratively with industry so that our research wasn't  
17 just blue sky research for knowledge's sake but was focused  
18 in the direction that might eventually bear commercial fruit  
19 with the express intent of helping the nation's economic  
20 competitiveness.

21 Q. All right. Thank you for the explanation.

22       Now, what -- what caused you to head to UC San Diego in  
23 1995?

24 A. Two things: Kids on the west coast; and UC San Diego,  
25 UCSD, offered me a full professorship in electrical

1       engineering. But, again, what was interesting to me was the  
2       opportunity to serve and actually create a brand-new center  
3       focused entirely on wireless communications.

4           So unlike the NSF-funded center, the wireless center was  
5       funded entirely by the wireless industry. But the objective  
6       was the same, work closely with industry, define the scope of  
7       the research, help to explain to industry what some of the  
8       opportunities were, understanding what some of the industrial  
9       issues were down the road, and ultimately, transfer  
10      technologies into new products, new services, like cellular  
11      networks.

12     Q.    Okay. One -- one more question about UC San Diego. It  
13     says there that you've been emeritus status in 19- -- excuse  
14     me, in 2008. What does that mean?

15     A.    Okay. So what it means is I retired from UCSD in -- at  
16     the end of 2007, December 31st exactly. And I did that for a  
17     couple of reasons.

18           One, I wanted to spend a little bit more time with my  
19     family.

20           And, two, I had a bunch of outside activities that I  
21     wanted to pursue.

22           But I still keep a desk. I still electively teach. I  
23     can electively supervise Ph.D. students, although I haven't  
24     taught now in probably three or four years. In fact, you met  
25     one of my students earlier today.

1 Q. And then, sir, the Wireless Facilities, Incorporated,  
2 what does that refer to?

3 A. That was -- it started out as a rather small company in  
4 San Diego. And soon after I moved out west I was approached  
5 by the CEO of this -- this company. And at the time, as  
6 wireless carriers were deploying their cellular networks,  
7 especially among the smaller carriers, there was a basic  
8 issue.

9 It takes a lot of design skill to design a cellular  
10 network. Where should the cell sites be located? How do we  
11 ensure that we're getting adequate coverage over the service  
12 region? How do we ensure we have the adequate capacity to  
13 serve the expected demand? What equipment is available and  
14 should be installed?

15 So a lot of these small companies, rather than hire this  
16 highly-skilled group of people for the two-year term that it  
17 took to deploy the network, what they did instead was come to  
18 Wireless Facilities.

19 We had the -- in fact, WFI eventually grew to about  
20 3,000 people. And in the day we designed and deployed a good  
21 fraction of -- of United States cellular infrastructure, a  
22 good part of Mexico's cellular infrastructure, and we had  
23 operations in Europe and Asia and the Middle East as well.

24 Q. All right. Thank you, sir.

25 And I think during the opening statements the jury heard

1 me describe you as I think a renowned expert in the field,  
2 and I wanted them to get a little more sense of that.

3 So on the next slide, sir, I see you've listed yourself  
4 as an author of a book. Would you fill us in on what that's  
5 all about?

6 A. Sure.

7 So I already explained way back when there was a  
8 telephone company and the telephone system was just that. It  
9 provided good -- very good telephony.

10 But the world is changing. The Internet was emerging  
11 from research and prototyping, and it was going commercial.  
12 And this created a need for -- to rethink a new type of  
13 nationwide network, one that was focused not just on  
14 telephony but on data of various types -- image, video  
15 communications.

16 And the phrase was born "broadband network," something  
17 different than the voice network, we could view the  
18 information in narrow pipes. These broadband networks were  
19 intended to provide lots of additional services requiring  
20 wide bandwidths well beyond the needs of voice.

21 So a lot of work had taken place. And in 1994 I  
22 organized all of this into one of the first, maybe even the  
23 first book on the subject.

24 Q. All right. And then I see further down it looks like  
25 you're an inventor on 40 U.S. patents; is that right?

1 A. That's correct.

2 Q. And what generally do those patents relate to?

3 A. The role in the field is telecommunications. And about  
4 half of them are wireless communications.

5 Q. All right. And then further down you list the IEEE.

6 Sir, what's a fellow for the IEEE?

7 A. The IEEE is a worldwide professional association. I  
8 believe we're about 300,000 members. And each year .1  
9 percent of the population is elected to the grade of fellow.

10 Fellow is the highest grade in the IEEE. It's the only  
11 grade that you cannot self-nominate. You have to be  
12 nominated by another fellow. There's a fairly extensive  
13 bidding process. And like I said, .1 percent of the  
14 population becomes a fellow each year.

15 Q. All right. And then near the bottom, you're listed as a  
16 committee member for the National Research Council, for a  
17 board for them. Describe for us, please, what that's all  
18 about.

19 A. Okay. It's a lot of words, so I'll let you read it  
20 rather than repeating it. But there was this body, again,  
21 funded out of Washington, that was -- had basically created a  
22 committee to study the future, the evolution of the Internet.

23 And we published a book making our recommendations. I  
24 was a member of that committee.

25 Q. All right. Thank you.

1       Now, since you've been retired from UC of San Diego,  
2 what kind of consulting work have you been involved in?

3 A. I've consulted for companies on specific projects. I  
4 was associated with startup companies. I founded a company.

5       And I've been doing work similar to what I'm doing here  
6 today, which is most of what I do over the last several  
7 years, basically providing consulting and expert services in  
8 patent litigation.

9 Q. Now, have you ever worked for Apple before?

10 A. I've been engaged by -- when you say -- I've never been  
11 employed by Apple, but I've been engaged by Apple, yeah.

12 Q. Fair enough. Sorry about that. I asked you a bad  
13 question.

14       All right. So about how many times have you been  
15 engaged by Apple?

16 A. Five that I -- I believe the number is five.

17 Q. And of those, about how many times have you been engaged  
18 by only Apple?

19 A. You mean one of those five?

20 Q. Yes.

21 A. Well, three of those -- in three of those matters, it  
22 was only Apple, and in two of those matters, Apple was one of  
23 five or six co-defendants.

24 Q. And can you give us a sense of how much -- I guess what  
25 percentage or generally how much of your overall work on

1 these types of matters, your work for Apple was?

2 A. Well, let me go back, let's say, over the past ten years  
3 or so. And over that period, I've probably been involved in  
4 roughly 30 matters or thereabout, give or take. I'm going by  
5 memory now. So 5 out of 30, about 15 percent.

6 Q. All right.

7 THE COURT: Are we at a good stopping point?

8 MR. HOMRIG: Yes, Your Honor.

9 THE COURT: All right. Ladies and Gentlemen of the  
10 Jury, we're going to recess for the day. I'll remind you not  
11 to discuss this case with anyone.

12                   We'll see you tomorrow morning. We'll start at  
13 9:00 a.m.

14 || COURT SECURITY OFFICER: All rise.

15 (Jury out.)

16 THE COURT: All right. First, I'll give the  
17 parties your time. Plaintiff has used 10 hours and  
18 14 minutes. The Defendant has used 10 hours and 7 minutes

19                   Are there still bench issues we need to take up  
20 today or -- if so, I'm happy to. If it's something that can  
21 wait while the jury is deliberating, that's when I'd like to  
22 take it up.

23 MR. FINDLAY: I believe we have Ms. Mewes who maybe  
24 has ten minutes. Can I confirm that, Judge?

THE COURT: Yes, you may confirm that, please.

1                   Dr. Acampora, you can step down, please. Thank  
2 you.

3                   THE WITNESS: Thank you.

4                   MR. FINDLAY: Yes, we do, Your Honor.

5                   THE COURT: Okay.

6                   MR. FINDLAY: Thank you.

7                   THE COURT: Let's bring in Ms. Mewes.

8                   Ms. Mewes, I'll remind you, you're still under  
9 oath.

10                  Please be seated.

11                  THE WITNESS: Yes, Your Honor.

12                  THE COURT: Mr. McManis?

13                  MR. MC MANIS: Your Honor, I think we actually have  
14 some objections to some of the exhibits and some of the  
15 testimony that we expect Ms. Mewes to give at the bench  
16 today. We'd just like to raise those now.

17                  THE COURT: Okay.

18                  MR. MC MANIS: And, really, this comes down to a  
19 disclosure issue. Ms. Mewes was disclosed as a trial witness  
20 on the issue of damages. And we find out now that Apple  
21 wants to call Ms. Mewes to talk about issues of SSO estoppel,  
22 which really goes to unenforceability.

23                  And as you can see, they disclosed a number of  
24 may-call witnesses for the issue of unenforceability,  
25 Ms. Mewes not being one of them.

1                   Going back to Rule 26 disclosures back in May of  
2 this year, Ms. Mewes was disclosed as having information only  
3 with respect to Apple licenses and nothing to do with these  
4 ETSI or 3GPP IPR declarations.

5                   It's true that Apple did put her up as a witness on  
6 this topic at her deposition, but that does not fix their  
7 disclosure issues with respect to this trial.

8                   THE COURT: Did you depose her on this topic?

9                   MR. McMANIS: Yes, Your Honor, we did.

10                  THE COURT: Response?

11                  MS. NGUYEN: Thank you, Your Honor. Lisa Nguyen  
12 for Apple.

13                  As Mr. McManis said, Ms. Mewes was deposed on this  
14 topic.

15                  THE COURT: Why wasn't she disclosed?

16                  MS. NGUYEN: I think we were a little -- it was our  
17 fault. I think we thought that this wouldn't relate to jury  
18 issues, and there was some miscommunication with respect to  
19 whether or not this -- the disclosure related to bench issues  
20 as well.

21                  THE COURT: Well, but, I mean, there were several  
22 witnesses on the may-call list where you specifically listed  
23 unenforceability. Why not her?

24                  MS. NGUYEN: And if you look at the -- so she was  
25 disclosed on Apple's licensing for sure and on damages and

1 with respect to FRAND.

2 So if you also look at -- I'm sorry. I don't have  
3 the disclosures in front of me, but, for example,

4 Mr. Royer -- sorry -- Mr. Levitan was disclosed as  
5 a FRAND expert, and so there was some miscommunication with  
6 respect to that.

7 But we don't think there's any prejudice here as  
8 Mr. McManis said. She was disclosed -- or deposed -- I'm  
9 sorry -- on this topic in particular on the policies.

10 Mr. McManis said that she was only disclosed with  
11 respect to Apple's policies and things like that; but as you  
12 can see, on the top of 19 where she was actually designated  
13 on, it also says with respect to the policies, procedures,  
14 and reporting related to ETSI and 3GPP as well.

15 THE COURT: Any final word, Mr. McManis?

16 MR. CALDWELL: If I could just -- one additional  
17 I'd like to make, Your Honor, is, when this came up with  
18 Mr. Sebire, and there was some discussion as to whether we  
19 would kind of go out of order on an issue where they bear the  
20 burden of proof, and we would have Mr. Sebire, we had that  
21 whole discussion about they had an expert, it was Ben  
22 Levitan, was he going to come and actually present some of  
23 this SSO estoppel thing; and they said no, and he didn't.

24 So they got a person that we went and deposed on  
25 these issues and wrote his responsive report, and we have

1 submitted findings of fact and conclusions of law, and this  
2 just seems to be -- you know, you sort of cover that deal  
3 when the guy who actually tried to carry the water on it is  
4 not coming.

5 You know, we don't want to argue proprietary of  
6 that, but he was even saying things like you have a duty to  
7 stand up and interrupt a meeting to talk about your patent.  
8 But then they called Magnus Stattin who admits, of course,  
9 that's not true.

10 They've sort of retreated from the guy they  
11 disclosed on these theories, and now we're getting someone  
12 that was never disclosed on these theories, and that's just  
13 fundamentally unfair for us to cross --

14 THE COURT: Well, I understand that, but what is  
15 the real prejudice if you were able to depose her on this  
16 topic?

17 MR. CALDWELL: Well, I think the real prejudice is  
18 that this would be like expert testimony, and it's not  
19 something where we have any kind of an opinion laying out. I  
20 think that that's pretty well reflected by the fact that they  
21 actually had this other person, Ben Levitan, who does an  
22 expert report.

23 We have no sort of a -- I mean, the fact that we  
24 could ask her a couple of fact-based questions because she  
25 happens to be designated on a topic like in a deposition or

1 something, is quite different than she is a person who's  
2 going to come in and give quasi expert testimony.

3 And we have no basis to think that this is in her  
4 expertise, that she's ever participated in the standard  
5 setting, et cetera. So there's quite a lot of issue to it.

6 THE COURT: What is she going to testify about?

7 MS. NGUYEN: Your Honor, she's not going to testify  
8 regarding what people are supposed to do at the meetings with  
9 respect to do I stand up, do I -- you know, she's not the  
10 person at the meeting.

11 So she's not going to testify on what, I think,  
12 Mr. Caldwell characterized as expert testimony. What she's  
13 going to provide is information on Apple's reliance on the  
14 policy and that -- how that impacts Apple.

15 THE COURT: All right. I really think it's fairly  
16 inexcusable that she was not disclosed on this topic; but  
17 considering that she was put up for it, I'll let you get into  
18 it a little bit. She will not give anything that appears to  
19 be an expert opinion on these issues, though, okay?

20 MS. NGUYEN: Understood.

21 THE COURT: Let's proceed.

22 HEATHER MEWES, DEFENDANTS' WITNESS, PREVIOUSLY SWORN

23 DIRECT EXAMINATION

24 BY MS. NYUGEN:

25 Q. Good afternoon, Ms. Mewes.

1 A. Good afternoon.

2 Q. Who supplies Apple with the cellular chipset in the  
3 products at issue in this case?

4 A. It's a company called Qualcomm.

5 Q. Are you familiar with Apple's agreements with Qualcomm?

6 A. Yes, at a high level.

7 Q. Do they contain restrictions on where Apple can use the  
8 Qualcomm chips?

9 A. None that I'm aware of. We're allowed to sell our  
10 products anywhere we want.

11 Q. Does Apple sell the Qualcomm chip as a standalone  
12 product, or does it incorporate the chip into its products?

13 A. The Qualcomm chip is incorporated into iPhone and iPad  
14 products.

15 Q. How does Apple use the Qualcomm chips in its products?

16 A. It provides the cellular functionality for our iPad and  
17 iPhone products.

18 Q. As part of your job responsibilities -- let's switch  
19 topics and talk about standards.

20 Do you deal with standards?

21 A. Yeah. So I'm responsible for licensing with respect to  
22 cellular essential patents.

23 Q. And we've been talking about LTE. Which standard  
24 setting organization develops the LTE standard?

25 A. So the overarching organization is called 3GPP. And one

1       of the member partner organizations is known as ETSI, the  
2 European Telecommunication Organization [sic]. And they're a  
3 member of 3GPP and are largely involved in the standard  
4 setting.

5 Q. Does 3GPP have an IPR policy?

6 A. They do. It largely just refers to the member policy so  
7 the operative policy is the ETSI policy.

8 Q. And does ETSI have an IPR policy?

9 A. Yes, it does.

10                   MS. NGUYEN: Mr. Schmoller, can we put up PX-598?

11 Q. (By Ms. Nguyen) Ms. Mewes, do you recognize PX-598?

12 A. Yes. So this is a collection of the directives under  
13 which ETSI operates. And one of them is the IPR policy.

14 Q. And how are you familiar with this document?

15 A. So as part of my role in licensing patents, I -- some of  
16 the patents are subject to obligations under ETSI, so I'm  
17 familiar with the IPR policy as a result of that.

18                   MS. NGUYEN: And could we have Page 39?

19                   And can you go to -- zoom in on 4.1?

20 Q. (By Ms. Nguyen) Ms. Mewes, what is Section 4.1?

21 A. So Section 4.1 relates to the obligation of disclosure  
22 for members of ETSI who are involved in the standards making  
23 process.

24 Q. And can you see -- read what that first sentence says?

25 A. It says: Subject to Article 4.2 below, each member

1 shall use its reasonable endeavors, in particular during the  
2 development of a standard or technical specification where it  
3 participates to inform ETSI of essential IPRs in a timely  
4 fashion.

5 Q. And what is that?

6 A. So this is just an obligation -- a general obligation on  
7 everybody to make timely disclosure of essential IPRs.

8 Q. And what is that next sentence?

9 A. So the next sentence refers to a particular obligation  
10 with respect to submitting technical proposals. So a member  
11 who submits a technical proposal shall, on a bona fide basis,  
12 draw the attention of ETSI to any of that member's IPR which  
13 might be essential if that proposal is adopted.

14 So this is a specific obligation if you're making a  
15 proposal to disclose before adoption.

16 MS. NGUYEN: And can we go to Section 6.1?

17 Q. (By Ms. Nguyen) Ms. Mewes, are you familiar with  
18 Section 6.1?

19 A. Yes. So this is the reference to FRAND licensing.  
20 Basically, it's not an obligation to license your patents on  
21 FRAND, but members are strongly encouraged to make a  
22 commitment to license on a FRAND basis.

23 Q. And how does the ETSI IPR policy impact Apple?

24 A. So Apple as an implementer of standards, relies on  
25 members having complied with the IPR policy.

1 Q. Have you seen what happens when members of ETSI do not  
2 follow the IPR policy?

3 A. Certainly. You can end up in situations like this one.

4 Q. And what happens with -- what are the concerns related  
5 to that?

6 A. Yeah. So the concerns are with respect to standards --  
7 the whole point of a standard is that lots of people adopt  
8 it. And so this is what we can call lock-in. Once people  
9 have -- have sunk a bunch of costs into making  
10 standardized products, it's basically just really hard to  
11 change the standard so that's what we call a lock-in.

12 Q. And why is that a concern?

13 A. So once you have lock-in it provides an opportunity for  
14 patent holdup which could be either something refusing to  
15 license their patent at all or refusing to license it on --  
16 only offering it on unreasonable terms.

17 Q. And if somebody does offer their patent on unreasonable  
18 terms, why doesn't the standard setting organization just  
19 change its standard?

20 A. Because of the problem of lock-in, basically that  
21 it's -- it's very difficult to change the standard after the  
22 fact.

23 Q. Thank you, Ms. Mewes.

24 MS. NGUYEN: Pass the witness.

25 THE COURT: All right. Cross-examination?

1 MR. HILL: Thank you, Your Honor.

2 CROSS-EXAMINATION

3 BY MR. HILL:

4 Q. Ms. Mewes, how are you again?

5 A. I'm good.

6 Q. Good.

7 I have a few questions for you to follow up on some of  
8 the things you just discussed.

9 First off, have you ever participated in a actual  
10 standard setting body?

11 A. I have not.

12 Q. Never been there?

13 A. I have not.

14 Q. Can't testify of personal knowledge about anything about  
15 how a standard setting organization works, can you?

16 A. Just with respect to my familiarity as a result of  
17 licensing with respect to standard essential patents.

18 Q. Do you know when the Document 598 -- Defendants'  
19 Exhibit 598 that you were just referring to, do you know the  
20 date on that document?

21 A. I don't recall specifically. I know the policy has  
22 changed slightly over time.

23 Q. Okay.

24 A. But I think the core obligations remain the same.

25 Q. Have you -- would you have noticed that Defendants'

1       Exhibit 598 -- and I'll find it here and show you -- where  
2       the 2005 -- December 2005 directive, correct?

3       A.     Yes.

4       Q.     All right. And you know the patent at issue in this  
5       case was filed on November 5th of 2007, correct?

6       A.     That's my understanding. I don't know the precise date.

7       Q.     Now, have -- so you've never attended a 3GPP working  
8       group meeting, Ms. Mewes?

9       A.     That's correct.

10      Q.     Now, you mentioned on direct something in the context of  
11       these meetings that's called an IPR. That means intellectual  
12       property right; is that correct?

13      A.     That's correct.

14      Q.     And there is a call for an IPR that is made at the  
15       beginning of each 3GPP meeting, correct?

16      A.     Well, I've seen that in the policies. I haven't -- as I  
17       said, I haven't been to a meeting to hear that.

18      Q.     Okay. So you don't actually know, then?

19      A.     I know it's in the policy. I don't know -- I haven't  
20       been in a meeting so I couldn't tell you whether that  
21       actually happens.

22      Q.     All right. And you just mentioned a call for IPR. We  
23       haven't seen any actual set of meetings or meeting minutes or  
24       anything else where a call for IPR was made that you're  
25       saying is relevant to this case, have we?

1 A. I wasn't saying anything about a call for IPR.

2 Q. All right. So I tell you what. Let's do this:

3 Let's -- now --

4 MR. HILL: Can I ask for just a moment here, Your  
5 Honor? I think there are several of these issues I can skip  
6 through with Ms. Mewes? So I don't want to waste any more  
7 time than we have to.

8 THE COURT: Yes. Thank you.

9 Q. (By Mr. Hill) Now, you discussed earlier the ETSI  
10 directives?

11 A. Yes.

12 Q. And you discussed the requirement that members timely  
13 disclose their IPR to ETSI, correct?

14 A. Yes.

15 Q. And would you agree there's no definition for what is  
16 and what is not timely in ETSI?

17 A. I agree, yeah. It's -- I think there's actually some  
18 guidance that indicates that members could not agree on what  
19 "timely" means.

20 Q. Well, in fact, if we look at Exhibit 598?

21 MR. HILL: Could you pull that up, Mr. Evans?

22 Q. (By Mr. Hill) And we look specifically at Page 51 of it,  
23 we will see there in Note 1 that it says: Definitions for  
24 timeliness or timely cannot be agreed because such  
25 definitions would constitute a change to the policy.

1           Do you see that?

2   A.   I do.

3   Q.   And so if we look a bit more at this page, it says: The  
4       importance of timely disclosure of essential IPRs...

5           That's in the title there. Do you see that?

6           MR. HILL: Can we back that out?

7   Q.   (By Mr. Hill) Do you have Exhibit 598 there with you  
8       that you're referring to?

9   A.   I don't, no.

10   Q.   Well, if we look, it says here that -- I apologize. Let  
11      me find it as well. That one is tough to read on the screen.

12           Now, in this document here that we're looking at, it has  
13      a definition of "intentional delay," does it not?

14   A.   I guess I didn't think of it as a definition, but I do  
15      see the language there, yes.

16   Q.   Okay. Do you see under Note 2 it says: Intentional  
17      delay has arisen when it can be demonstrated that an ETSI  
18      member has deliberately withheld IPR disclosures  
19      significantly beyond what would be expected from normal  
20      considerations of timeliness?

21           Do you see that?

22   A.   Yes.

23   Q.   So it talks about what's normal. Do you agree?

24   A.   It doesn't really tell you what it is, but it talks  
25      about it.

1 Q. And to determine whether something is normal or not  
2 normal, you would have to know what the normal timeline is,  
3 wouldn't you?

4 A. Well, I think part of the point here is that the members  
5 couldn't agree what timeliness meant.

6 Q. Okay.

7 A. And so they deliberately used vague terms.

8 Q. All right. And so we would have to look at what the  
9 landscape is for declaring essential patents to ETSI, right?

10 A. I don't know that. I mean, I think you'd look to what  
11 timeliness means and to reasonable people --

12 Q. Now, you testified --

13 A. -- in circumstances.

14 Q. I'm sorry. I didn't mean to cut you off.

15 A. I think you'd look to what timeliness means to  
16 reasonable people in circumstance.

17 Q. Now, you testified that Apple looks at the number of  
18 patents that have been required essential to LTE, right?

19 A. Yes.

20 Q. And so Apple would at least have an idea about what the  
21 normal timeline for disclosure is, wouldn't you?

22 A. No. We get basically overall statistics, and so you  
23 don't see when things are declared in that.

24 Q. Okay. So Apple actually does not know, then, what the  
25 normal timeline is, accurate?

1 A. So, as you think -- I don't personally know. I think  
2 Apple probably knows, because obviously we have joined ETSI  
3 and have procedures in place for disclosing our own IPR.

4 MR. HILL: Let's look at Defendants' Exhibit 631,  
5 if we can.

6 Q. (By Mr. Hill) Do you recognize Defendants' Exhibit 631  
7 as a study from Cyber Creative Institute that Apple produced  
8 in this case entitled Evaluation of LTE Essential Patents  
9 Declared to ETSI?

10 A. I don't think I've seen this before, no.

11 Q. All right. Well, let's look at it a little bit.

12 It's a document that Apple has sought to bring into this  
13 trial.

14 Are you aware of that?

15 A. I'm sorry. I didn't hear you.

16 Q. It's a document that Apple has sought to bring into this  
17 trial.

18 Are you aware of that?

19 A. I'm not aware of that, no.

20 Q. Are you familiar with the fact that most of the exhibits  
21 labeled by the Defendants in this case were labeled with a D,  
22 correct?

23 A. I guess I -- I don't -- I can't see that on that screen,  
24 but if you tell me that's the case, yeah.

25 Q. All right. That looks like a Defendants' exhibit to

1 you?

2 A. It does, yeah.

3 Q. And if we go to Page 3 and we go to the bottom of the  
4 page, we see here that the author of this paper states what  
5 this survey is evaluating, and he states -- you'll see it  
6 right here -- that this paper evaluates the number of patents  
7 that are essential to LTE and LTE-advanced standards based on  
8 patents declared to ETSI.

9 Do you see that?

10 A. Where are you -- sorry. I'm just trying to find where  
11 you're pointing to.

12 Q. Let me get a better color here, right here (indicating).

13 A. Okay. Yes. I see that.

14 Q. All right.

15 MR. HILL: If we could go to Page 7 now, Mr. Evans.

16 Q. (By Mr. Hill) And we see here on Page 7: Number of  
17 patents declared by each company.

18 See that section?

19 A. Oh, yes. In the title, yes, I see that.

20 Q. All right. And this -- starting in the second  
21 paragraph, right here (indicating), it says: Some of the  
22 companies started their declarations as early as 2007 when  
23 the standards were still being developed.

24 However, on the whole, the number of declaring companies  
25 started increasing after 2009 when the full standards -- or

1 excuse me -- when the standards were fixed and the commercial  
2 development got into full swing.

3 Do you see that?

4 A. I do.

5 Q. Do you know when NSN declared the '820 patent essential  
6 to LTE, Ms. Mewes?

7 A. No, not specifically.

8 Q. Would you be surprised to learn it was in 2009?

9 A. No.

10 Q. If we go to the next page, we actually see a chart that  
11 shows the declaration year at the bottom.

12 MR. HILL: Could we show the bottom of the chart?

13 Q. (By Mr. Hill) Do you see the declaration year?

14 A. Uh-huh.

15 Q. Okay. And it shows each declaring company on the left.

16 Do you see that, Ms. Mewes?

17 A. Yes, I do.

18 Q. And would you agree that the vast majority of ETSI  
19 declarations come in 2009 or later?

20 A. So this is only LTE declarations?

21 Q. Uh-huh.

22 A. Yeah. So I do see, obviously, that there are more  
23 later. I don't know if that's a reflection of the fact  
24 that -- I'm actually not sure exactly what this is showing  
25 because sometimes applications grow. Obviously, the families

1 grow. I know there's some kind of family count, but I don't  
2 know how it's calculated.

3 Q. Okay. Is it Apple's position in this case that all of  
4 the patents disclosed in 2009 or later should be held  
5 unenforceable for untimely disclosure to ETSI, Ms. Mewes?

6 A. It would really depend on the circumstances.

7 Q. Now, Apple wasn't a 3GPP member during the time that LTE  
8 was first developed and Mr. Sebire's invention was included  
9 in the standard text in 2008 and 2009, was it?

10 A. That's correct.

11 Q. And is it your position that Apple first learned -- is  
12 it your position that Apple first learned of the '820 patent  
13 when NSN and Apple engaged in licensing discussions in 2012?

14 A. That's right.

15 Q. And NSN provided claim charts?

16 A. Like I said, NSN provided a chart where it provided  
17 Claim 1 and some language from the standard.

18 Q. And there were charts that went back and forth between  
19 Apple and NSN, correct?

20 A. So Apple also provided charts on its declared essential  
21 patents, yes.

22 Q. And Apple didn't object to the '820 patent as being  
23 untimely disclosed at that time, did it, Ms. Mewes?

24 A. Yeah. I think it's fair to say we were not aware of it  
25 at that time.

1 Q. And have you seen any evidence in this case that one of  
2 the companies actually in 3GPP objected to the '820 patent as  
3 being untimely disclosed in 2009, at the time it was declared  
4 to ETSI?

5 A. So I haven't -- other than my testimony, I haven't been  
6 able to observe any testimony.

7 Q. Now, Apple has made some ETSI declarations for patents  
8 essential to LTE, hasn't it?

9 A. It has, yes.

10 Q. And those declarations didn't come until 2012, did they,  
11 Ms. Mewes?

12 A. I don't recall exactly when we joined ETSI, but  
13 certainly that sounds right.

14 MR. HILL: Let's take a look at Defendants'  
15 Exhibit 361.

16 I'm sorry. Did I say 361? 631. I'm sorry. We're  
17 going to look at Page 7 again. Back to where you were,  
18 Mr. Evans. I apologize.

19 I apologize again. I'm having -- I'm struggling to  
20 see this document as we look at it, Ms. Mewes. We'll just  
21 have to hold on just a second.

22 (Pause in proceedings.)

23 MR. HILL: Your Honor, I'll pass the witness.

24 THE COURT: All right. Any redirect?

25 MS. NGUYEN: Mr. Schmoller, could I have

1 Exhibit 631?

2 And let's go to Page 6. I'm sorry. It says 6 on  
3 the document, so I guess two more -- one more back. I'm  
4 sorry.

5 And can you zoom in? Actually, let's zoom in on  
6 the third paragraph.

7 REDIRECT EXAMINATION

8 BY MS. NGUYEN:

9 Q. Ms. Mewes, do you recall Mr. Hill asked you a few  
10 questions about Exhibit 631?

11 When did Apple join 3GPP?

12 A. I don't recall the exact year, but it was after 2010, I  
13 think -- or 2010 or later.

14 Q. And I think you mentioned Apple does have standard  
15 essential patents; is that right?

16 A. That's right.

17 Q. And where did those standard essential patents come from  
18 with respect to LTE?

19 A. For the most part, they were acquired from Nortel.

20 Q. And when did those -- when were those patents declared?

21 A. So when Apple acquired the Nortel portfolio, it  
22 evaluated all of the patents it received, and it re-declared  
23 those that it believed were essential.

24 MS. NGUYEN: Could I get Exhibit 598?

25 And can you go to Page 39? And 4.1 again.

1 Q. (By Ms. Nguyen) Ms. Mewes, I think you mentioned before  
2 the first sentence was a -- can you explain again what the  
3 first sentence in 4.1 is?

4 A. So this is the general obligation to disclose on a  
5 timely basis.

6 Q. And what is the second sentence?

7 A. This is the specific obligation with respect to members  
8 who are submitting a technical proposal.

9 Q. And does that second sentence discuss any sort of  
10 timing?

11 A. Yeah. It says, "if that proposal is adopted," which we  
12 believe means that it has to be disclosed before the proposal  
13 is adopted.

14 Q. Thank you.

15 MS. NGUYEN: No further questions.

16 I'm sorry, Your Honor. I'm told that Exhibit 598  
17 has not been admitted yet. I would move 598 into evidence.

18 THE COURT: Any objection?

19 MR. HILL: None.

20 THE COURT: It will be admitted.

21 MS. NGUYEN: Thank you, Your Honor.

22 MR. HILL: For the bench trial only, Your Honor.

23 THE COURT: Yes.

24 RECROSS-EXAMINATION

25 BY MR. HILL:

1 Q. All right, Mr. Mewes. Ms. Nguyen helped us out here.  
2 She found the actual portion of the paragraph I couldn't find  
3 earlier.

4 So let's look at Page 7 of Exhibit 631. And let's look  
5 at the third paragraph. And let's look at this specifically.

6 So it says that: Apple and Sharp are worth noting.

7 Figure 1 shows that Apple declared in 2008, '11, and '12.

8 The declarations in 2008 were the ones that Nortel  
9 declared at that year, which Apple obtained from Nortel and  
10 re-declared in 2012. In effect, Apple made its first  
11 declarations in 2012.

12 Do you see that?

13 A. I do.

14 Q. And so Apple, who made its declarations for the first  
15 time in 2012, is here accusing -- making an accusation that  
16 the '820 patent was declared late in 2009, correct?

17 A. So I actually think the patents were declared by Nortel  
18 in 2008, and all we did is when we got -- they came into our  
19 possession, we re-declared them to comply with our  
20 obligations.

21 Q. And then the remainder of Apple's patents were declared  
22 in 2012?

23 A. I think these were the Nortel patents.

24 Q. Okay. Thank you.

25 THE COURT: Anything further?

1 MS. NGUYEN: No, Your Honor.

2 THE COURT: Okay. You may step down, Ms. Mewes.

3 May this witness be excused? Any objection?

4 MR. HILL: Yes, Your Honor.

5 THE COURT: Okay. Ms. Mewes, you are excused.

6 All right. Anything further on the bench issues

7 today?

8 MR. LUMISH: Not from Apple, Your Honor.

9 THE COURT: Okay. In case you're keeping track of  
10 your bench time, the Plaintiff has used 35 minutes and the  
11 Defendant has used 1 hour and 2 minutes.

12 Is there anything I can help you with tonight  
13 before we adjourn for the day?

14 MR. LUMISH: Again, not from Apple.

15 MR. CURRY: Nothing.

16 THE COURT: All right. We'll be in recess until  
17 9:00 a.m.

18 COURT SECURITY OFFICER: All rise.

19 (Recess.)

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## CERTIFICATION

3 IT IS HEREBY CERTIFIED that the foregoing is a  
4 true and correct transcript from the stenographic notes of  
5 the proceedings in the above-entitled matter to the best of  
6 our abilities.

9 /s/ \_\_\_\_\_  
CHRISTINA BICKHAM, CRR, RMR  
Official Court Reporter

September 12, 2016

12 /s/ \_\_\_\_\_  
13 SHEA SLOAN, CSR, RPR  
Official Court Reporter